



Memorandum

Date: November 4, 1998

From: T. M. Allen/N. Dbaibo  
OSC Geotechnical Branch

Phone: (360) 709-5469

Subject: SR- 167, 0L-2305  
15<sup>th</sup> Avenue SW to 15<sup>th</sup> Avenue NW  
HOV Lanes - Stage 3,  
MP 13.73 to MP 15.76  
Geotechnical Recommendations

To: T. Smith / F. Miller  
NW Region, NB82-29

As requested, we are providing you with geotechnical recommendations for the design of ramps AR2 and DL2 at the S. 180th Street undercrossing. Based on our discussions with Mr. Marvin LaBorn of the NW PEO, it is our understanding that the presence of peat is the main concern associated with the design and construction of the widening along these two ramps. It is also our understanding that minimal amounts of fill, on the order of 1 to 1.5 feet, will be required to achieve design grades at these locations.

NW Materials Lab. conducted a subsurface exploration program consisting of probing and visually identifying the subsurface soils at 1 foot depth increments. In addition the probing was performed at 50 foot intervals along both ramp alignments. The results of the probing indicates that loose soils, consisting mainly of sand and silty sand, are present under the ramp alignments. No peat was identified in any of the 26 probes. Groundwater was present at the ground surface or within 1 to 1.5 feet from ground surface. The results of the subsurface exploration program, indicating the depth of loose soil and depth to groundwater, are presented with the attached plan sheets.

Based on the results of the subsurface exploration, it is our opinion that the ramps can be constructed as planned. No special design or construction requirements are needed. Settlement of the loose sandy soils is expected to occur as construction is proceeding. Additional long-term settlement will depend on the traffic frequency and loading conditions. However, based on the layout plans the widening along the ramps will be mainly to accommodate the shoulder construction. Therefore, long term settlement can be considered to be negligible as a result of low traffic loading.

The conclusions and recommendations contained in this memorandum are based on the project description and site conditions as they existed at the time the subsurface exploration and information supplied NW Materials Lab. It is further assumed that the subsurface conditions as interpreted from the probes are representative of the subsurface conditions throughout the project area. If during construction, subsurface

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conditions are different from those encountered in the exploratory borings, or appear to be present beneath or beyond the excavations, we should be advised so that we can assist you and re-evaluate our recommendations.

We trust this information is sufficient at this time. Should you have questions or require further information, please contact Nabil Dbaibo at (360) 709-5469 or Jim Cuthbertson at (360) 709-5452.

TMA:ntd

NTD

Attachments

cc: J. Johnson, NW NB82-143  
M. LaBorn, NW NB82-143

DESIGNED BY	K. EZEKEKE
ENTERED BY	M. LABORN
CHECKED BY	M. ASKARIAN
PROJ. ENGR.	J. JOHNSON
REGIONAL ADM.	J. OKAMOTO

DATE DATE REVISION BY

REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	
JOB NUMBER		
CONTRACT NO.		

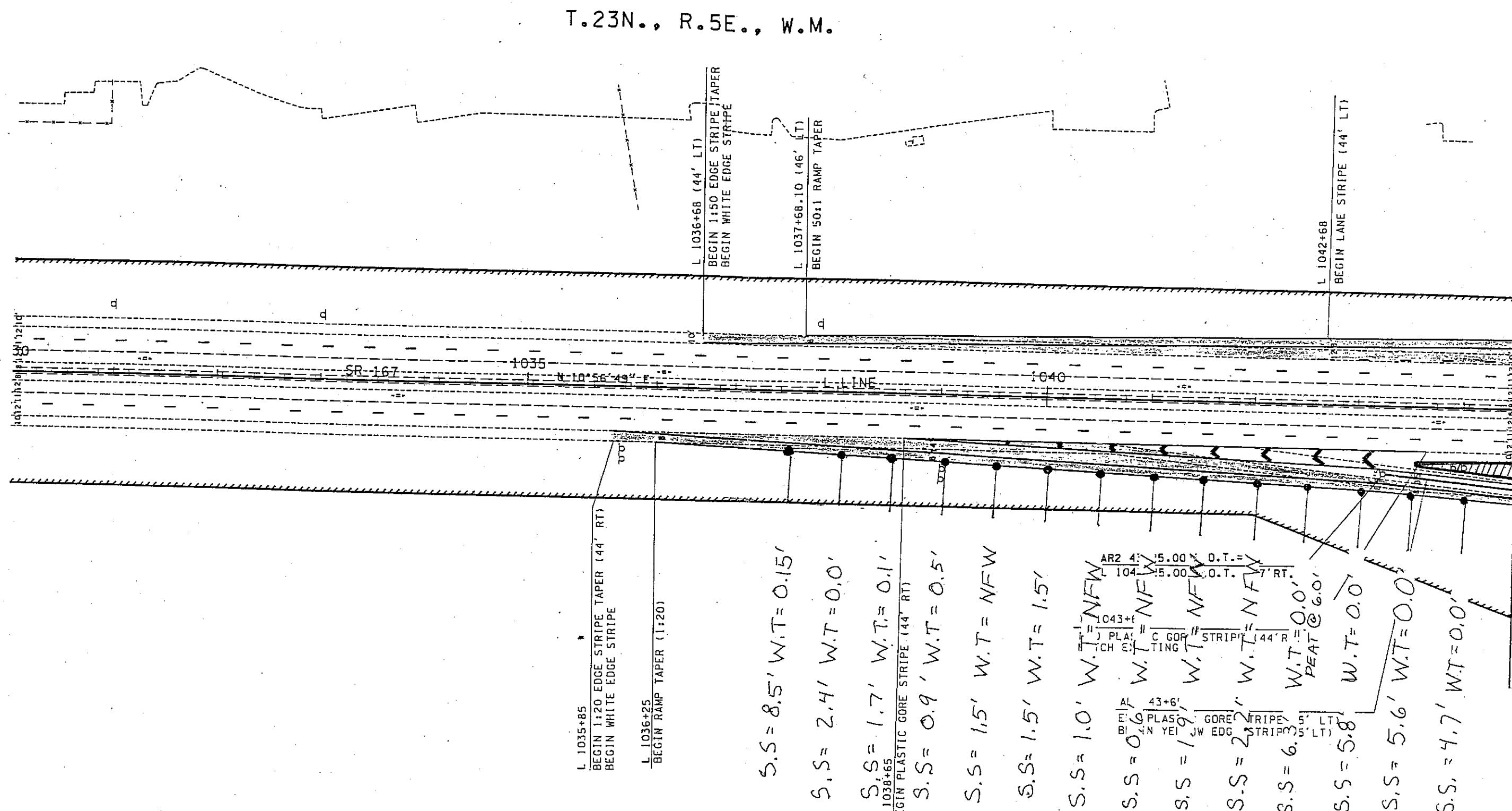
ENVIRONMENTAL AND ENGINEERING  
SERVICE CENTERWashington State  
Department of Transportation

MP 13.73 TO MP 15.76

36

SR 167  
15TH AVE SW TO 15TH NW  
HOV LANES - STAGE 3SHEET  
OF  
SHEETS

CHANNELIZATION PLAN



S.S = 4.6' W.T = 0.0'  
 S.S = 5.9' W.T = 0.0'

MATCH LINE STA L 1044+50

# SOUTH 180TH STREET INTERCHANGE

L 1048+68  
END LANE STRIPE (50' LT)  
BEGIN PLASTIC GORE STRIPE  
(44' LT & 50' LT)

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ENVIRONMENTAL AND ENGINEERING  
SERVICE CENTERWashington State  
Department of Transportation

MP 13.73 TO MP 15.76

SR 167  
15TH AVE SW TO 15TH NW  
HOV LANES - STAGE 3

37

SHEET

OF

SHEETS

CHANNELIZATION PLAN

AR2 46+76.50 P.C.

AR2 46+76.50  
END YELLOW EDGE STRIPE (8' LT)  
END WHITE EDGE STRIPE (5' RT)  
MATCH EXISTING

b

b

AR2 RAMP

150

AR2 54+32.20 P.C.

180TH 10+25  
PLASTIC CROSSWALK STRIPE  
PLASTIC STOP BAR

S. 180TH 10+00 P.O.T.  
AR2 56+63.40 P.O.T.  
DR2 55+22.20 P.O.T.

AR2 52+31.80 P.T.

q

q

q

q

q

q

q

q

q

AR2 56+13.40 RT.  
S. 89+03.11' E

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AL2' 53+51 P.O.T. =  
L 1053+68.10 (67' LT.)  
END 50:1 RAMP TAPER  
BEGIN 43:1 RAMP TAPER  
END GORE STRIPE (44' LT & 60' LT)  
BEGIN YELLOW EDGE STRIPE (60' LT)  
BEGIN WHITE EDGE STRIPE (44' LT)

L 1054+51

BEGIN SHOULDER TAPER (54' LT)  
AL 2' 54+14.04 (22.48' LT)=  
L 1054+30.68 (90.74' LT)  
BEGIN RETAINING WALL 7

L 1054+85

END SHOULDER TAPER (53' LT)

1035+45  
BEGIN SHOULDER TAPER (53' LT)  
AL 2' 55+72.02 (22.14' LT)=  
L 1055+88.63 (93.57' LT)  
END RETAINING WALL 7

L 1056+57

END SHOULDER TAPER (60' LT)

AL2' 56+51 A.P.  
BEGIN GORE STRIPE (6' LT)  
END 43:1 RAMP TAPER

AL2' 57+51

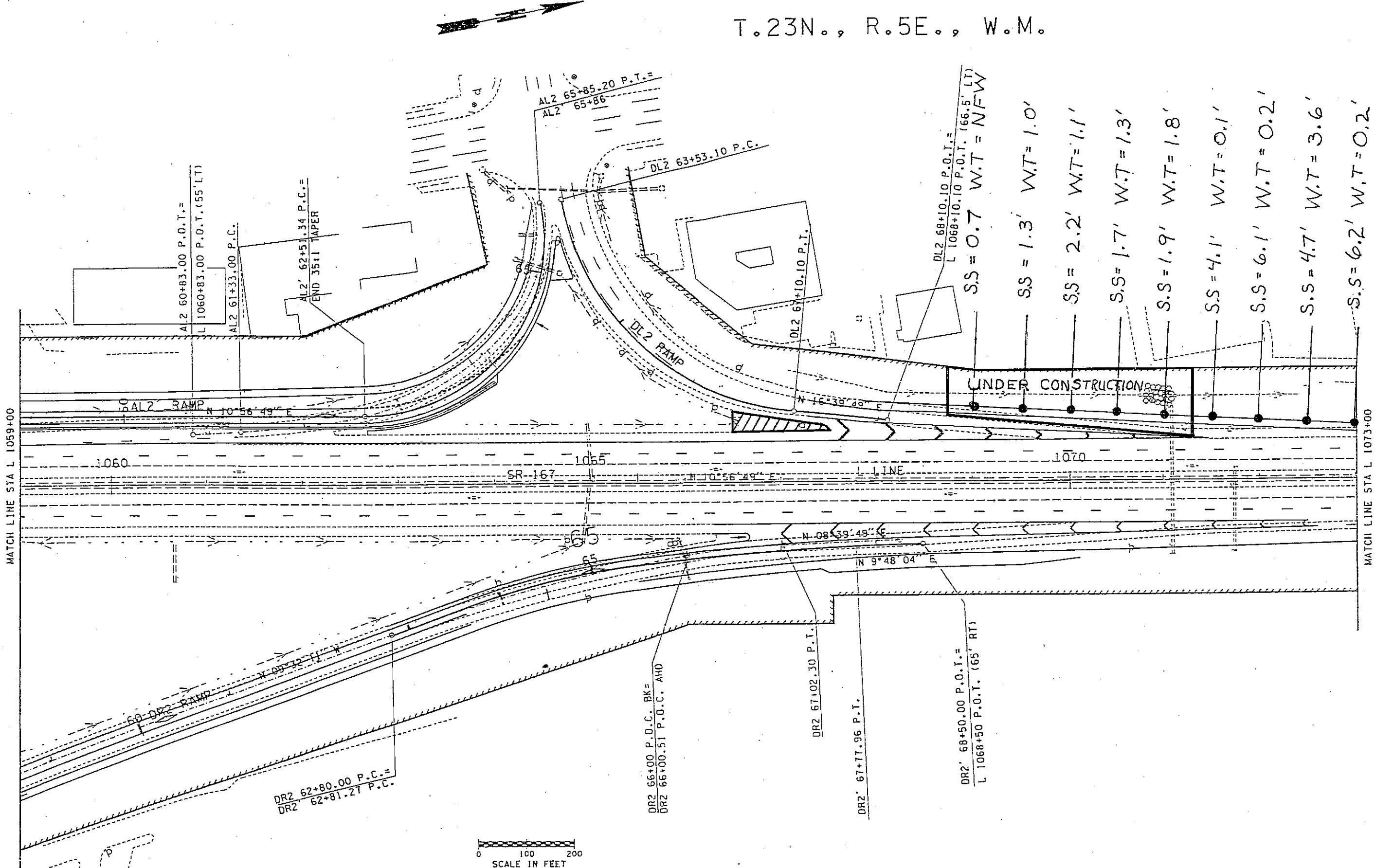
STOP BAR (6' TO 18' LT)

MATCH LINE STA L 1059+00

1045  
1050  
1055  
N 16°39'49" E  
SR 167  
LINE  
15 HIWAY  
1056+57  
PREFERENTIAL LANE SYMBOL  
S. 180TH 5+69.10 P.O.T.  
L 1055+07.55 P.O.T.  
S. 180TH 10+00 P.O.T.  
AR2 56+63.40 P.O.T.  
DR2 55+22.20 P.O.T.  
180TH 10+25  
PLASTIC CROSSWALK STRIPE  
PLASTIC STOP BAR  
DR2 55+60(20' LT)  
BEGIN YELLOW EDGE STRIPE  
MATCH EXISTING  
P BEGIN DOTTED GORE STRIPE  
E DR2 RAMP N 09°32'11" W  
DR2 57+00(6' RT)  
END DOTTED GORE STRIPE  
BEGIN GORE STRIPE  
PLASTIC CROSSWALK STRIPE  
DB2-55+55  
BEGIN WHITE EDGE STRIPE (76' RT)

T.23N., R.5E., W.M.

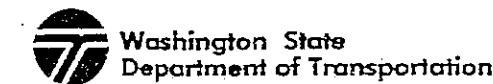
MATCH LINE STA L 1059+00



SCALE IN FEET

DESIGNED BY	K. EZEOKIKE
ENTERED BY	M. LABORN
CHECKED BY	M. ASKARIAN
PROJ. ENGR.	J. JOHNSON
REGIONAL ADM.	J. OKAMOTO

REGION NO.	STATE	FED. AID PROJ. NO.	JOB NUMBER	CONTRACT NO.
10	WASH			

ENVIRONMENTAL AND ENGINEERING  
SERVICE CENTERSR 167  
15TH AVE SW TO 15TH NW  
HOV LANES - STAGE 3

CHANNELIZATION PLAN

MP 13.75 TO MP 15.76  
38  
SHEET  
OF  
LETS